

This section characterizes existing air quality in the project area, includes a summary of applicable air quality regulations, and analyzes potential air quality impacts associated with the proposed project. Air quality impacts were assessed in accordance with methodologies recommended by the California Air Resources Board (CARB) and the San Diego Air Pollution Control District (SDAPCD).

This section is based on technical data presented in the *Air Quality Assessment* prepared by Ldn Consulting, Inc. (2022a; see Appendix C-1) and the *Health Risk Screening Letter* (2022b; see Appendix C-2). Additionally, supporting information was utilized from the *Transportation Impact Study*, prepared by Intersecting Metrics (2022; see Appendix K). Analysis in this section also draws upon data in the *City of Encinitas General Plan* (1991) and the *City of Encinitas 2013-2021 Housing Element Update Environmental Assessment* (2018). Third-party technical reports were peer reviewed by Michael Baker International and the City of Encinitas.

## ENVIRONMENTAL SETTING

Air quality and dispersion of air pollution in an area is determined by such natural factors as topography, meteorology, and climate, coupled with atmospheric stability. The factors affecting the dispersion of air pollution with respect to the air basin are discussed below.

### ***Topography***

The topography in the San Diego Air Basin (SDAB) varies greatly, from beaches on the west to mountains and desert on the east. Much of the topography in between consists of mesa tops intersected by canyon areas. The region's topography influences air flow and the dispersal and movement of pollutants in the basin. The mountains to the east prevent air flow mixing and prohibit dispersal of pollutants in that direction.

### ***Meteorology and Climate***

Encinitas, like the rest of San Diego County's coastal area, has a Mediterranean climate characterized by warm, dry summers and mild, wet winters. The mean annual temperature in the City is 60 degrees Fahrenheit (°F). The average annual precipitation is 11 inches, falling primarily from November to April. Winter low temperatures in the City average about 54°F, and summer high temperatures average about 71°F. The average relative humidity is 69 percent and is based on the yearly average humidity at Lindbergh Field.

The dominant meteorological feature affecting the region is the Pacific high-pressure zone, which produces the prevailing westerly to northwesterly winds. These winds tend to blow pollutants

away from the coast toward the inland areas. Consequently, air quality near the coast is generally better than that at the base of the coastal mountain range. Most of the City consists of coastal plains, which lie adjacent to the Pacific Ocean and extend approximately 6 miles east of the Pacific Ocean. Because of its locational advantage, the westerly portion of the City has a mild climate with cool summers on the coast, where fog is common.

Fluctuations in the strength and pattern of winds from the Pacific high-pressure zone interacting with the daily local cycle produce periodic temperature inversions that influence the dispersal or containment of air pollutants in the SDAB. Beneath the inversion layer, pollutants become “trapped” as their ability to disperse diminishes. The prevailing westerly wind pattern is sometimes interrupted by regional Santa Ana conditions. A Santa Ana wind occurs when a strong high pressure system develops over the Nevada-Utah area and overcomes the prevailing westerly coastal winds, sending strong, steady, hot, dry northeasterly winds over the mountains and out to sea. Strong Santa Anas tend to blow pollutants out over the ocean, producing clear days inland. However, at the onset or during breakdown of these conditions or if the Santa Anas are weak, local air quality may be adversely affected.

### ***Sensitive Receptors***

Sensitive receptors are more susceptible to the effects of air pollution than the general population. Sensitive populations (sensitive receptors) in proximity to localized sources of toxics and carbon monoxide are of concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. The nearest sensitive receptors are adjacent residences to the west of the project site and Capri Elementary School, at 941 Capri Road, approximately 0.4 miles southeast of the project site.

### ***Air Pollutants of Concern***

Air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state laws. These regulated air pollutants are known as criteria air pollutants and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. Carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxide (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), coarse particulate matter (PM<sub>10</sub>), fine particulate matter (PM<sub>2.5</sub>), lead, and fugitive dust are primary air pollutants. Of these, CO, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are criteria pollutants. ROG and NO<sub>x</sub> are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere (for example, ozone [O<sub>3</sub>] is formed by a chemical reaction between ROG and NO<sub>x</sub> in the presence of sunlight). Ozone and nitrogen dioxide (NO<sub>2</sub>) are the principal secondary pollutants.

Sources and health effects commonly associated with criteria pollutants are summarized in Table 3.2-1, Criteria Air Pollutants Summary of Common Sources and Effects.

**Table 3.2-1: Criteria Air Pollutants Summary of Common Sources and Effects**

Pollutant	California Standard	Federal Primary Standard	Year	Maximum Concentration <sup>3</sup>	Days (Samples) State/Federal Std. Exceeded
Ozone (O <sub>3</sub> ) <sup>1</sup> (1-hour)	0.09 ppm for 1 hour	NA <sup>6</sup>	2018 2019 2020	0.102 ppm 0.083 0.123	1/0 0/0 2/0
Ozone (O <sub>3</sub> ) <sup>1</sup> (8-hour)	0.070 ppm for 8 hours	0.070 ppm for 8 hours	2018 2019 2020	0.077 ppm 0.075 0.012	5/5 1/1 12/10
Carbon Monoxide (CO) <sup>2</sup> (1-hour)	20 ppm for 1 hour	35 ppm for 1 hour	2018 2019 2020	1.900 ppm 4.100 3.300	0/0 0/0 0/0
Nitrogen Dioxide (NO <sub>2</sub> ) <sup>2</sup>	0.18 ppm for 1 hour	0.100 ppm for 1 hour	2018 2019 2020	0.055 ppm 0.054 0.054	0/0 0/0 0/0
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>2,5</sup>	No Separate Standard	35 µg/m <sup>3</sup> for 24 hours	2018 2019 2020	* 18.9 µg/m <sup>3</sup> 40.2	* */0 */1
Particulate Matter (PM <sub>10</sub> ) <sup>1,4,5</sup>	50 µg/m <sup>3</sup> for 24 hours	150 µg/m <sup>3</sup> for 24 hours	2018 2019 2020	38.0 µg/m <sup>3</sup> * *	0/0 * *

ppm = parts per million; PM<sub>10</sub> = particulate matter 10 microns in diameter or less; µg/m<sup>3</sup> = micrograms per cubic meter; PM<sub>2.5</sub> = particulate matter 2.5 microns in diameter or less; NA = not applicable; \* = insufficient data available to determine the value

Notes:

1. Data collected from the San Diego-Kearny Villa Road Monitoring Station located at 6125A Kearny Villa Road, San Diego CA, 92145.
2. Data collected from the San Diego-Rancho Carmel Drive Monitoring Station located at 11403 Rancho Carmel Drive, San Diego CA 92128.
3. Maximum concentration is measured over the same period as the California Standards.
4. PM<sub>10</sub> exceedances are based on state thresholds established prior to amendments adopted on June 20, 2002.
5. PM<sub>10</sub> and PM<sub>2.5</sub> exceedances are derived from the number of samples exceeded, not days.
6. The federal standard was revoked in June 2005.

## REGULATORY FRAMEWORK

### *Federal and State*

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the National Ambient Air Quality Standards (NAAQS) to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at

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the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before an air basin can attain the standard. Air quality is considered “in attainment” if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O<sub>3</sub>, CO, SO<sub>2</sub> (1-hour and 24-hour), NO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub>, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. The NAAQS and CAAQS are presented in Table 3.2-2, Ambient Air Quality Standards.

**Table 3.2-2: Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
O <sub>3</sub>	1 hour	0.09 ppm (180 µg/m <sup>3</sup> )	—	Same as Primary Standard
	8 hours	0.070 ppm (137 µg/m <sup>3</sup> )	0.070 ppm (137 µg/m <sup>3</sup> )	
NO <sub>2</sub>	1 hour	0.18 ppm (339 µg/m <sup>3</sup> )	0.100 ppm (188 µg/m <sup>3</sup> )	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )	
CO	1 hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	None
	8 hours	9.0 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	
SO <sub>2</sub>	1 hour	0.25 ppm (655 µg/m <sup>3</sup> )	0.075 ppm (196 µg/m <sup>3</sup> )	—
	3 hours	—	—	0.5 ppm (1,300 µg/m <sup>3</sup> )
	24 hours	0.04 ppm (105 µg/m <sup>3</sup> )	0.14 ppm (for certain areas)	—
	Annual	—	0.030 ppm (for certain areas)	—
PM <sub>10</sub>	24 hours	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>	—	
PM <sub>2.5</sub>	24 hours	—	35 µg/m <sup>3</sup>	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	12.0 µg/m <sup>3</sup>	15.0 µg/m <sup>3</sup>
Lead	30-day Average	1.5 µg/m <sup>3</sup>	—	—
	Calendar Quarter	—	1.5 µg/m <sup>3</sup> (for certain areas)	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m <sup>3</sup>	
Hydrogen sulfide	1 hour	0.03 ppm (42 µg/m <sup>3</sup> )	—	—

**Table 3.2-2, continued**

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Vinyl chloride	24 hours	0.01 ppm (26 µg/m <sup>3</sup> )	—	—
Sulfates	24 hours	25 µg/m <sup>3</sup>	—	—
Visibility-reducing particles	8 hours (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70%	—	—

Source: CARB 2016.

Notes: µg/m<sup>3</sup> = micrograms per cubic meter; CO = carbon monoxide; mg/m<sup>3</sup> = milligrams per cubic meter; NO<sub>2</sub> = nitrogen dioxide; O<sub>3</sub> = ozone; PM<sub>10</sub> = particulate matter with an aerodynamic diameter less than or equal to 10 microns; PM<sub>2.5</sub> = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns; ppm = parts per million by volume; SO<sub>2</sub> = sulfur dioxide

### **San Diego County Regional Air Quality Strategy**

The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations in San Diego County. The air district regulates most air pollutant sources, except for motor vehicles, marine vessels, aircraft, and agricultural equipment, which are regulated by CARB or the US Environmental Protection Agency. State and local government projects, as well as projects proposed by the private sector, are subject to SDAPCD requirements if the sources are regulated by the district. Additionally, the SDAPCD, along with CARB, maintains and operates ambient air quality monitoring stations at numerous locations throughout San Diego County. These stations are used to measure and monitor criteria and toxic air pollutant levels in the ambient air.

The SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB; refer to Table 3.2-3, San Diego Basin Attainment Status by Pollutant. The San Diego County Regional Air Quality Strategy (RAQS) was initially adopted in 1992. The RAQS outlines the air district's plans and control measures designed to attain the state air quality standards for ozone. The SDAPCD has also developed input to the State Implementation Plan (SIP), which is required under the federal Clean Air Act for pollutants that are designated as being in nonattainment of the NAAQS for the basin.

**Table 3.2-3: San Diego Air Basin Attainment Status by Pollutant**

Criteria Pollutant	Federal Designation	State Designation
Ozone (8-Hour)	Nonattainment	Nonattainment
Ozone (1-Hour)	Attainment *	Nonattainment
Carbon Monoxide	Attainment	Attainment
PM <sub>10</sub>	Unclassifiable **	Nonattainment
PM <sub>2.5</sub>	Attainment	Nonattainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No Federal Standard	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility	No Federal Standard	Unclassified

Notes:

\* The federal 1-hour standard of 12 pphm [parts per hundred million] was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in State Implementation Plans.

\*\* At the time of designation, if the available data does not support a designation of attainment or nonattainment, the area is designated as unclassifiable.

Source: SDAPCD 2020.

The RAQS relies on information from CARB and SANDAG, such as mobile and area source emissions, as well as information from local jurisdictions regarding projected growth, to project future emissions and establish the strategies necessary for the reduction of emissions through regulatory controls. Projects that propose development consistent with the growth anticipated by the RTP/SCS would be consistent with the RAQS. In the event that a project proposes development which is less intensive than anticipated in the RAQS, the project would likewise be consistent with the strategy. If a project proposes development that is greater than that anticipated in the growth projections, the project could conflict with the RAQS and the SIP and could have a potentially significant impact on air quality.

The SIP relies on the same information from SANDAG to develop emissions inventories and emissions reduction strategies that are included in the attainment demonstration for the air basin. The plan also includes rules and regulations that have been adopted by the SDAPCD to control emissions from stationary sources. These SIP-approved rules may be used as guidelines to determine whether a project's emissions would have the potential to conflict with the SIP and thereby hinder attainment of the NAAQS for ozone.

### **SDAPCD Measures to Reduce Particulate Matter in San Diego County**

In 2005, the SDAPCD adopted the *Measures to Reduce Particulate Matter in San Diego County*. This document identifies fugitive dust as the major source of directly emitted particulate matter

in the county, with mobile sources and residential wood combustion as minor contributors. Data on PM<sub>2.5</sub> source apportionment indicates that the main contributor to PM<sub>2.5</sub> in the county is combustion organic carbon, followed closely by ammonium sulfate and ammonium nitrate from combustion sources. The main contributors to PM<sub>10</sub> include resuspended soil and road dust from unpaved and paved roads, construction and demolition sites, and mineral extraction and processing. Based on the report's evaluation of control measures recommended by CARB to reduce particulate matter emissions, the SDAPCD adopted Rule 55, Fugitive Dust Control, in June 2009. The SDAPCD requires that construction activities implement the measures listed in Rule 55 to minimize fugitive dust emissions. Rule 55 requires the following:

1. No person shall engage in construction or demolition activity in a manner that discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.
2. Visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out shall be minimized by the use of any of the equally effective track-out/carry-out and erosion control measures listed in Rule 55 that apply to the project or operation. These measures include track-out grates or gravel beds at each egress point; wheel-washing at each egress during muddy conditions; soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding; watering for dust control; and using secured tarps or cargo covering, watering, or treating of transported material for outbound transport trucks. Erosion control measures must be removed at the conclusion of each workday when active operations cease, or every 24 hours for continuous operations.

In addition, the SDAPCD established Rule 20.2, which outlines the screening criteria for the preparation of air quality impact assessments (AQIA). Should emissions be found to exceed these thresholds, additional modeling is required to demonstrate that the project's total air quality impacts are below the state and federal ambient air quality standards. These screening thresholds for construction and daily operations are shown in Table 3.2-4, Screening Thresholds for Criteria Pollutants.

**Table 3.2-4: Screening Thresholds for Criteria Pollutants**

Emissions	Pollutant						VOCs
	ROG <sup>1</sup>	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	
<b>Construction Emissions</b>							
Daily Maximum (lbs/day)	75	250	550	250	100	55	75
Annual (tons/year)	40	40	100	40	15	15	40
<b>Operational Emissions</b>							
Daily Maximum (lbs/day)	75	250	550	250	100	55	75
Annual (tons/year)	40	40	100	40	15	15	40

Notes: ROG = reactive organic gases; NO<sub>x</sub> = nitrogen oxides; CO = carbon monoxide; SO<sub>x</sub> = sulfur oxides; PM<sub>10</sub> = particulate matter up to 10 microns; PM<sub>2.5</sub> = particulate matter up to 2.5 microns; lbs = pounds

1. SDAPCD Rule 20.2 does not establish threshold for ROG. Therefore, the threshold of significance for ROG from the South Coast Air Quality Management District is used. The ROG annual emissions threshold is calculated from 75 lbs/day multiplied by 365 days/year and divided by 2000 lbs/ton.

Source: Ldn Consulting 2022a (see Appendix C-1).

### **Other SDAPCD Rules and Regulations**

As discussed above under Regional Air Quality Strategy, state law dictates that local air districts such as the SDAPCD have primary responsibility for controlling emissions from non-mobile (stationary) sources. The stationary source control measures identified in the RAQS and the SIP have been developed by the air district into regulations through a formal rulemaking process. Rules are developed to set limits on the amount of emissions from various types of sources and/or by requiring specific emissions control technologies. Following rule adoption, a permit system is used to impose controls on new and modified stationary sources and to ensure compliance with regulations by prescribing specific operating conditions or equipment on a source.

SDAPCD Regulation XIV (Title V Operating Permits) contains the requirements for implementing the Title V permit program. The program requires all major sources of criteria air contaminants, all major sources of hazardous air pollutants, all sources that emit more than 100 tons per year of any regulated air contaminant, and certain other specified sources to obtain Title V permits. Permits are issued pursuant to Regulation XIV and incorporate state and local requirements that are contained in existing SDAPCD permits for these sources. Examples of operations that require permits are surface coating operations, adhesive materials application, automotive refinishing operations, dry cleaning operations, fiberglass or plastic product manufacturing, and gas stations.

The SDAPCD also implements New Source Review (NSR) in the air basin. Prior to installation of new, modified, relocated, or replacement equipment that results in an increase of air pollution emissions, the SDAPCD requires that an Authority to Construct be obtained and that the equipment be evaluated in accordance with applicable NSR rules. A Permit to Operate from the SDAPCD would be required to authorize operation or use of the equipment. If such equipment would exceed air pollutant thresholds, it must use Best Available Control Technology (BACT) to



reduce emissions. BACT definitions and requirements are outlined in SDAPCD Rule 20.1, NSR–General Provisions.

It is difficult to ensure that new or modified sources do not interfere with attainment or maintenance of the established air quality standards for ozone. Since ozone is a secondary pollutant (i.e., ozone is not directly emitted, but results from complex chemical reactions in the atmosphere from precursor pollutants), control of the precursors is required. This analysis assumes that Volatile Organic Compounds (VOC) and Reactive Organic Gases (ROG) are essentially the same due to the fact that emissions generated from the Project represent non-methane organic compounds. Control of emissions of ROG and nitrogen oxides, the ozone precursors, is essential. The SDAPCD adopted Rule 67.0.1, Architectural Coatings, which establishes VOC content limits for architectural coatings, in 2015.

Additionally, SDAPCD Rule 1210, Toxic Air Contaminant Public Health Risks–Public Notification and Risk Reduction, implements the public notification and risk reduction requirements of the California Air Toxics “Hot Spots” Act (AB 2588) and requires facilities to reduce risks to acceptable levels within five years.

Adopted in 1996 and mostly recently revised in 2019, Rule 1200, Toxic Air Contaminants - New Source Review, requires evaluation of potential health risks for any new, relocated, or modified emission units that may increase emissions of one or more toxic air contaminant(s). In regard to an increase of cancer risk, Rule 1200 requires the following:

- **T-BACT Not Applied.** The increase in maximum incremental cancer risk at every receptor location is equal to or less than one in one million for any project for which new, relocated, or modified emission units that increases maximum incremental cancer risk are not equipped with T-BACT; and
- **T-BACT Applied.** Except as provided in (d)(1)(iii), the increase in maximum incremental cancer risk at every receptor location is equal to or less than 10 in one million for any project for which all new, relocated, or modified emission units that increases maximum incremental cancer risk are equipped with T-BACT (SDAPCD 2019).

Compliance with this rule does not relieve a person from having to comply with other applicable requirements in these rules and regulations, or state and federal law.

#### **SDAPCD Rule 51 - Odor Impacts**

The State of California Health and Safety Code, Division 26, Part 4, Chapter 3, Section 41700 SDAPCD Rule 51 (Public Nuisance), and the City’s Municipal Code prohibit emissions from any source in such quantities of air contaminants or other material that cause injury, detriment,

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nuisance, or annoyance to the public health or damage to property. Projects required to obtain permits from SDAPCD are evaluated by SDAPCD staff for potential odor nuisance, and conditions may be applied (or control equipment required) where necessary to prevent occurrence of public nuisance.

SDAPCD Rule 51 also prohibits emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of any person. A project that proposes a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors. Odor issues are subjective by the nature of odors themselves and due to the fact that their measurements are difficult to quantify. Therefore, this guideline is qualitative and focuses on existing and potential surrounding uses and the location of sensitive receptors.

#### **San Diego County Department of Environmental Health**

Section 101080 of the California Health and Safety Code authorizes a local health officer to declare a local health emergency in the health officer's jurisdiction, or any part thereof, when the health officer determines that there is an imminent and proximate threat of the introduction of any contagious, infections, or communicable disease, chemical agent, non-communicable biological agent, toxin, or radioactive agent. On March 13, 2020, the San Diego County Health Officer issued an Order that was implemented to garner additional tools to assist with San Diego County's compliance with Executive Order N-33-20 issued by the Governor of the State of California and the California Department of Public Health's gathering guidance due to COVID-19. The San Diego County Health and Human Services Department and the Health Officer continue to amend the original order to provide guidance and recommendations for residents and business of San Diego County to safely conduct business, including construction activities, during this COVID-19 pandemic

#### ***Local***

#### **City of Encinitas General Plan**

The *General Plan* is the primary source of long-range planning and policy direction used to guide growth and preserve the quality of life in the City of Encinitas. The Encinitas General Plan states that a goal of the City is to analyze proposed land uses to ensure that the designations would contribute to a proper balance of land uses within the community. The relevant goals and policies for the project include:

*Resource Management Element*

**GOAL 5:**                    **The City will make every effort to participate in programs to improve air and water quality in the San Diego region.**

Policy 5.1:                    The City will monitor and cooperate with the ongoing efforts of the U. S. Environmental Protection Agency, the San Diego Air Pollution Control District, and the State of California Air Resources Board in improving air quality in the regional air basin. The City will implement appropriate strategies from the San Diego County SIP which are consistent with the goals and policies of this plan.

**GOAL 13:**                    **Create a desirable, healthful, and comfortable environment for living while preserving Encinitas, unique natural resources by encouraging land use policies that will preserve the environment.**

Policy 13.1:                    The City shall plan for types and patterns of development which minimize water pollution, air pollution, fire hazard, soil erosion, silting, slide damage, flooding and severe hillside cutting and scarring.

## **STANDARDS OF SIGNIFICANCE**

### ***Thresholds of Significance***

The State of California has developed guidelines to address the significance of air quality impacts based on Appendix G of the CEQA Guidelines. The proposed project would have a significant impact related to air quality if it would:

1. Conflict with or obstruct the implementation of the applicable air quality plan.
2. Expose sensitive receptors to substantial pollutant concentrations.
3. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.
4. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.

## PROJECT IMPACTS AND MITIGATION

### *CONFLICT WITH AIR QUALITY PLAN*

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<b>Impact 3.2-1</b>	<b>The project would not conflict with or obstruct implementation of the applicable air quality plan. Impacts would be less than significant.</b>
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The project site is located within the San Diego Air Basin and is regulated by the SDAPCD. As described above, the SIP and RAQS are the applicable air quality plans for the SDAPCD. Consistency with the SIP and RAQS means that a project is consistent with the goals, objectives, and assumptions set forth in the SIP and RAQS that are designed to achieve Federal and state air quality standards.

The basis for the RAQS and SIP is the growth rate in population in the region as projected by SANDAG. SANDAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans. In March 2019, the City adopted its General Plan Housing Element Update (HEU) that included updated employment and residential growth projections. The HEU Environmental Assessment (EA) determined that the HEU would result in a cumulative impact on air quality due to the increase in residential units which were not accounted for in the RAQS and SIP at that time. Although the RAQS does not reflect the increased population associated with the HEU, the City previously mitigated this issue by providing SANDAG with updated housing and land use data to update the RAQS as required by the HEU EA to ensure that any revisions to the residential and employment growth projections used by SDAPCD are accounted for in the RAQS and the SIP.

The project would be consistent with the City's General and HEU land use and zoning designations. In addition, because the City previously mitigated the increase in residential associated residential and employment growth, which were not currently accounted for in the RAQS projections by providing updating information to SANDAG for inclusion in future updates to the RAQS and SIP, the project would not cause the SANDAG's population forecast to be exceeded and ensure that any revisions to the residential and employment growth projections used by SDAPCD are accounted for in the RAQS and the SIP. Therefore, emissions generated by the project would be addressed in the RAQS and SIP. In addition, as discussed in Impact 3.2-2, below, the project would result in emissions that would be below the SDAPCD thresholds. Therefore, the project would not conflict with or obstruct implementation of the RAQS and SIP.

The proposed project would not result in a long-term impact on the region's ability to meet state and federal air quality standards, would be consistent with General Plan Policy 5.1 and Policy 13.1, and the impact would be **less than significant**.

**Mitigation Measures:** None required.

**Level of Significance:** Less than significant.

**EXPOSE SENSITIVE RECEPTORS TO POLLUTANTS**

**Impact 3.2-2**      **The project would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant with mitigation incorporated.**

The nearest sensitive receptors to the project site are single-family residences to the east. According to the SDACPD's Rule 1200, a project would result in a significant impact to a sensitive receptor if the project's emissions of any toxic air contaminant resulted in a cancer risk greater than 10 in 1 million.

**Construction**

Emissions of pollutants, such as fugitive dust and heavy equipment exhaust, that are generated during construction are generally highest near the construction site. Emissions from project construction were estimated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0. CalEEMod is the state-wide accepted modeling software used for preparing air quality analysis. The model utilizes project-specific inputs including location, construction schedule, and proposed uses.

Demolition and construction of the project is expected to occur over an approximately 19.5-month period. Table 3.2-5, Expected Construction Emissions Summary, provides the detailed emission estimates for each year of construction, as calculated with CalEEMod (Appendix C-1).

**Table 3.2-5: Expected Construction Emissions Summary (pounds per day)**

Year	ROG	NO <sub>x</sub>	CO	SO <sub>2</sub>	PM <sub>10</sub> (Total)	PM <sub>2.5</sub> (Total)
2023	0.51	7.38	21.30	0.06	19.82	10.15
2024	0.64	7.32	20.25	0.06	8.09	3.73
2025	62.95	3.31	22.39	0.04	1.24	0.34
<b>Significance Threshold (lb/day)</b>	<b>75</b>	<b>250</b>	<b>550</b>	<b>250</b>	<b>100</b>	<b>55</b>
<b>Is Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

1. Emissions were calculated using CalEEMod, version 2020.4.0. Winter emissions represent worst-case.
2. Modeling assumptions include compliance with standard dust control measures (water exposed surfaces three times daily) and SDAPCD Rule 67.0.1 (architectural coatings with ROG content of less than 50 grams per liter for flat coatings and 100 grams per liter for non-flat coatings).

Source: Ldn Consulting, Inc. 2022a (see Appendix C-1).

As shown in Table 3.2-5, emissions of criteria pollutants during construction would be below the thresholds of significance for each year of construction. As project criteria pollutant emissions during construction would not exceed SDAPCD air quality standards and would be temporary, impacts would be **less than significant** and no mitigation measures are required.

### ***Long-Term (Operational) Emissions***

Operational impacts would include impacts associated with vehicular traffic, as well as area sources such as energy use (i.e., natural gas for cooking purposes in future restaurants), water and wastewater, landscaping maintenance, consumer products use (i.e., household cleaners, automotive products), and architectural coatings use for maintenance purposes. Operational impacts associated with vehicular traffic and area sources were estimated using CalEEMod.

#### Mobile Source Emissions

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG, NO<sub>x</sub>, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> are all pollutants of regional concern (NO<sub>x</sub> and ROG react with sunlight to form O<sub>3</sub> [photochemical smog], and wind currents readily transport SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>); however, CO tends to be a localized pollutant, dispersing rapidly at the source.

Table 3.2-6, Long-Term Operational Air Emissions, presents the anticipated mobile source emissions. As shown, emissions generated by vehicle traffic associated with the project would not exceed established SDAPCD thresholds. In addition, consistent with General Plan Policy 3.11, the project would include bicycle parking spaces on-site to encourage bicycle travel. Impacts from mobile source air emissions would be **less than significant**.

#### Area Source Emissions

Area source emissions would be generated from consumer products, architectural coating, and landscaping. As required, all architectural coatings for the proposed on-site structures would comply with SDAPCD *Rule 67.0.1 - Architectural Coating*. As shown in Table 3.2-6, area source emissions from the project would not exceed SDAPCD thresholds for ROG, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>.

#### Energy Source Emissions

Energy source emissions would be generated as a result of electricity and natural gas associated with the proposed project for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. Per City regulations, the project does not propose the use of natural gas, as such use is prohibited for residential use. As a design feature, the project would install

high efficiency lighting fixtures. In addition, although not quantified and included in Table 3.2-7, the project would install solar panels capable of generating 149 kilowatt (kW) of solar power, which would be consistent with General Plan Policy 15.1, Policy 15.2, and Policy 15.3. As shown in Table 3.2-6, energy source emissions from the project would not exceed SDAPCD thresholds for ROG, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>.

**Table 3.2-6: Long-Term Operational Air Emissions**

Emissions Source	Pollutant (lbs/day) <sup>1</sup>					
	ROG	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Proposed Project Summer Emissions</b>						
Area Source Emissions	4.07	0.14	12.28	0.00	0.07	0.07
Energy Emissions <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Emissions <sup>3</sup>	2.48	2.47	22.23	0.05	5.41	1.47
Total Emissions <sup>4</sup>	<b>6.55</b>	<b>2.61</b>	<b>34.51</b>	<b>0.05</b>	<b>5.48</b>	<b>1.53</b>
SDAPCD Threshold	75	250	550	250	100	55
<b>Is Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Proposed Project Winter Emissions</b>						
Area Source Emissions	4.07	0.14	12.28	0.00	0.07	0.07
Energy Emissions <sup>2</sup>	0.00	0.00	0.00	0.00	0.00	0.00
Mobile Emissions <sup>3</sup>	2.42	2.67	22.81	0.05	5.41	1.47
Total Emissions <sup>4</sup>	<b>6.49</b>	<b>2.81</b>	<b>35.09</b>	<b>0.05</b>	<b>5.48</b>	<b>1.53</b>
SDAPCD Threshold	75	250	550	250	100	55
<b>Is Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes:

1. Emissions were calculated using CalEEMod, version 2020.4.0.
2. As a design feature, the project would install high efficiency lighting fixtures.
3. The mobile source emissions were calculated using the trip generation data provided in the *Transportation Impact Study*, Intersecting Metrics 2022 (Appendix K).

Source: Ldn Consulting, Inc. 2022a (see Appendix C-1).

### Total Operational Emissions

Table 3.2-6 presents the results of the operational emission calculations, in pounds per day, and includes a comparison with the significance criteria. Based on the estimates of the emissions associated with project operations, the emissions of all criteria pollutants would be below the significance thresholds. As such, the project would not expose sensitive receptors to substantial pollutant concentrations during operations/occupancy. Impacts would be **less than significant**.

### **Health Risk**

#### Construction

The project construction activities are anticipated to involve the operation of diesel-powered equipment, which would emit Diesel Particulate Matter (DPM). In 1998, the CARB identified diesel exhaust as a Toxic Air Contaminant (TAC). Cancer health risks associated with exposures to

### 3.2 Air Quality

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diesel exhaust typically are associated with chronic exposure, in which a 30-year exposure period often is assumed. The project would construct residential buildings in compliance with the California Code of Regulations (CCR), Title 13, Sections 2449(d)(3) and 2485, which minimize the idling time of construction equipment either by turning it off when not in use or by reducing the time of idling to no more than five minutes. Implementation of these regulations would reduce the amount of DPM emissions from project construction.

The closest sensitive receptors to the project site are single-family residential uses to the east. However, health impacts on sensitive receptors associated with exposure to DPM from project construction are anticipated to be less than significant because construction activities are expected to last approximately 19.5 months, which is well below the 30-year exposure period used in health risk assessments. Additionally, emissions would be short-term and intermittent in nature, and therefore would not generate TAC emissions at high enough exposure concentrations to represent a health hazard. Impacts are **less than significant**.

#### Operations

The project would construct residential uses and would result in limited operational activities with the potential health risks, including landscaping maintenance operations. None of these activities would result in the generation of excessive TAC emissions, or associated health risks from the project's operation. Therefore, operation of the proposed project is not anticipated to result in an elevated cancer risk to nearby sensitive receptors and the impact would be **less than significant**.

#### Proximity to I-5

An Air Quality Health Risk Assessment (HRA) was prepared to evaluate potential health risks to project residents due to Diesel Particulate Matter (DPM) originating from proximity to I-5; refer to Appendix C-2. The analysis was prepared using the California Office of Environmental Health Hazard Assessment (OEHHA) methodologies (Office of Environmental Health Hazard Assessment) as outlined by the California Air Pollution Control Officers Association (CAPCOA).

The project site is located adjacent to I-5 between the off ramp of La Costa Avenue and Leucadia Boulevard. According to Caltrans, annual average daily trips (ADT) on I-5 are 213,000 ADT. Based on this data, I-5 would generate 0.0013 grams/second of diesel particulates over the modeled segment (Ldn Consulting, Inc. 2022b). Detailed EMFAC Model and Normalization calculations are provided in Attachment B of Appendix C-2.

Based on calculations included in the HRA, cancer risks for project residents resulting from exposure to suspended diesel particulates would exceed the established SDAPCD excess cancer risk significance threshold of 10 per one million exposed and could be considered a significant



impact (Ldn Consulting, Inc. 2022b). Refer also to Table 2: Cancer Risk at Worst-Case Outdoor Receptors (Unmitigated) of Appendix C-2.

In a study funded by CARB, the Lawrence Berkeley National Laboratory found that installation of Minimum Efficiency Reporting Value (MERV) 16 filtration on a supply ventilation system reduced PM<sub>2.5</sub> by 96-97 percent and ultrafine particles (UFP) by 97-99 percent relative to outdoors (Ldn Consulting, Inc. 2022b) and such filters are therefore recommended for homes with exposure to higher levels of PM<sub>2.5</sub>. To ensure that levels for the proposed residential units remain below significance thresholds, mitigation measure **AQ-1** would require installation of MERV-16 filtrations systems within each proposed residence to reduce potential indoor levels of PM<sub>2.5</sub>. Detailed descriptions of the mitigated cancer risk using MERV 16 filtration are included in Table 3: Cancer Risk at Worst-Case Indoor Receptors (Mitigated with MERV 16) of Appendix C-2. Impacts would be **less than significant with mitigation incorporated**.

**Mitigation Measures:**

**AQ-1**            **Install MERV-16 Filters Within Homes.** During project construction, MERV-16 filtration systems shall be installed within each residence.

**Level of Significance:** Less than significant with mitigation incorporated.

***OTHER EMISSIONS SUCH AS THOSE LEADING TO OBJECTIONABLE ODORS***

**Impact 3.2-3**            **The project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Impacts would be less than significant.**

Individual responses to odors are highly variable and can result in various effects, including psychological (i.e., irritation, anger, or anxiety) and physiological (i.e., circulatory and respiratory effects, nausea, vomiting, and headache). Generally, the impact of an odor results from a variety of interacting factors such as frequency, duration, offensiveness, location, and sensory perception. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

The frequency is a measure of how often an individual is exposed to an odor in the ambient environment. The sensory perception refers to the perceived intensity of the odor strength or concentration. The duration of an odor refers to the elapsed time over which an odor is experienced. The offensiveness of the odor is the subjective rating of the pleasantness or unpleasantness of an odor. The location accounts for the type of area in which a potentially affected person lives, works, or visits; the type of activity they are engaged in; and the sensitivity of the impacted receptor.

CARB's (2005) *Air Quality and Land Use Handbook* identifies the sources of the most common odor complaints received by local air districts. Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding.

Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from vehicles and equipment exhaust. Such odors would occur on a short-term, temporary basis. Further, such odors would disperse rapidly from the project site and would generally occur at levels that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

**Mitigation Measures:** None required.

**Level of Significance:** Less than significant.

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**CUMULATIVE IMPACTS**

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<b>Impact 3.2-4</b>	<b>The project would not result in a significant impact from a net increase of any criteria pollutant for which the region is nonattainment under an applicable federal or state ambient air quality standard or other cumulative impacts related to air quality. Impacts would be less than cumulatively considerable.</b>
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**Geographic Scope**

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SDAPCD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether the project's individual emissions would have a cumulatively significant impact on air quality. Cumulative projects that would have the potential to be considered in a cumulative context with the project's incremental contribution, and that are included in the analysis of cumulative impacts relative to air quality, are identified in Table 3.0-1 and Figure 3.0-1 in Section 3.0, Environmental Analysis, of this EIR.

Additionally, to be conservative, the cumulative analysis is based on the "worst-case" assumption that all 2019 HEU sites develop under maximum density bonus unit allowances. The cumulative impact analysis includes all 2019 HEU sites to the extent they may contribute to certain issue-specific cumulative effects (see Table 3.0-2).

Potential cumulative air quality impacts may result when the emissions from cumulative projects combine to degrade air quality conditions below attainment levels for the SDAB, delay

attainment of air quality standards, affect sensitive receptors, or subject surrounding areas to objectionable odors. The cumulative study area for air quality includes the SDAB, which is contiguous with San Diego County because air quality is evaluated at the air basin level. Cumulative impacts on sensitive receptors and odors are more localized and include surrounding areas close to the project site.

### ***Potential Cumulative Impacts***

As shown in Table 3.2-3, the SDAPCD is in federal nonattainment status for ozone (8-hour) and state nonattainment status for ozone (8-hour and 1-hour), PM<sub>10</sub>, and PM<sub>2.5</sub>. Projects that emit these pollutants or their precursors (i.e., VOC and NO<sub>x</sub> for ozone) potentially contribute to poor air quality. The SDAPCD significance thresholds consider the cumulative impact of a project that adds emissions to the entire air basin, in this case a basin already in nonattainment for several criteria. As indicated in Tables 3.2- 5 and 3.2-6, construction and operations/occupancy emissions would not exceed the SDAPCD significance thresholds. Other projects included in the cumulative project list would similarly be required to evaluate if such projects would exceed significance thresholds and contribute to an overall cumulative air impact in the basin.

As noted above, the SCAQMD concludes that it is not currently possible to accurately quantify ozone-related health impacts caused by NO<sub>x</sub> or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations. Other cumulative projects would similarly analyze their projected construction and operation air emissions to determine if the project exceeds the SDAPCD thresholds. If the other cumulative projects do not exceed SDAPCD thresholds for construction and operational air emissions, the projects would have a less than significant impact for air quality health impacts as well. Additionally, as construction emissions identified in Table 3.2-5 are low relative to standards, simultaneous construction of the cumulative projects would cause a less than significant cumulative impact on air quality (refer also to Appendix C-1).

The thresholds were developed to address criteria pollutants on an air-basin scale because air quality is an inherently cumulative issue. Because the proposed project is below these thresholds, it therefore would not result in a considerable contribution to regional air quality impacts. As noted under Impact 3.2-1 above, although the RAQS does not reflect the increased population associated with the HEU update, the City previously mitigated this issue by providing SANDAG with updated housing and land use data to update the RAQS as required by the HEU EA. In addition, as detailed above, the proposed project's emissions fall below established thresholds and therefore, the project's contribution to this cumulative impact would be **less than cumulatively considerable**.

**Mitigation Measures:** None required.

**Level of Significance:** Less than cumulatively considerable.